An Empirical Investigation of the Relationship between Institutional Aspect and Supply Chain Strategy in Relation to Investment Policy in Indonesia

M.Widaningsih[#1], *Budiman Rusli*[#2], *Margo Punomo*[#3], *Candradewini*[#4]

[1,2,3,4]*Faculty of Social and Political Sciences Universitas Padjadjaran*

[1]widamalizal@yahoo.com
[2]budiman.rusli@unpad.ac.id
[3]purnomo@unpad.ac.id
[4]candradewini@unpad.ac.id

Abstract--The asset size of institutional investment in Indonesia is only about 6% of its GDP which is an obvious indication of a very weak potential of investors to contribute to country's development plans or its infrastructure development. Hence, most asset managers and institutional investors fail to get any opportunity to work with Big Data analytics or financial supply chain management (SCM) practices. Due to a relatively restricted workflow and a very small volume of data to dispose, they mostly depend upon manual spreadsheets and primitive financial accounting methods. As a result, the data available for investors to make investment decisions are very limited in scope, lacking metrics for analysis. This study investigated the interrelationship of such institutional investors with supply chain practices. The results revealed that manually kept data of Indonesia investors are not properly organized nor are retrievable from their archives. The data of this study was collected through interviews of portfolio and asset managers, brokers and commissioned agents in banks, insurance and stock institutions of Indonesia. The theoretical framework of this study enabled to understand the scope of institutional investments in different scenarios. The findings reveal the evolution of such practices like sustainable SCM and green SCM that have strengthened the institutional investment patterns in Indonesia.

Keywords: *supply chain management, banking and insurance, institutional investment, Indonesia*

1. Introduction

Institutional investors are such organizations that collect funds from sectors such as securities, real estate, banking, insurance, pension and hedge funds. Conventionally, institutional investors are familiar with protective regulations and other operative procedures; hence, they enjoy more freedom in the management of investments. Despite that, the institutional investors require the services of financial analysts and supply chain specialists to assess the industrial scenario and make an in depth study of the future prospects of their investment. The supply chain strategies act as intermediaries between individual investors and institutions [1]. The supply chain specialists are hired to design strategies and reduce the cost of capital and open new avenues for diversifying investment portfolios. Supply chain management (SCM) practices play just not the role of an intermediary between suppliers and customers, their contribution to institutional investments now also includes the flow of information between various supply chain stages and ensure the maximization of profitability [2].

The history of institutional investments in Indonesia is traced back to mid-1980s when it first opened its doors to international investments (FDIs). An upward trend was noticed in FDI inflows soon after the 1997 Asian financial crisis [3]. Subsequently, Indonesia framed the Investment Law of 2007 which later developed as an investment policy framework for the Indonesian investment companies both at domestic and international levels [4]. Since then Indonesia has actively promoted institutional investments through government agencies such as the Indonesian Investment Co-ordination Board and various national teams on export and investment promotions. Particularly, a major restructuring was done in the financial services sector like banking and insurance after the 1997-98 crisis. Though they had very robustly faced the economic shocks of the crisis, but were very slow in institutional investments. Such reforms were made including establishment of credit bureaus to facilitate information flows across domestic and financial institutions. As a result, domestic direct investment (DDI) grew 21.3 percent to Rp 262.3 trillion and the Combined FDI and DDI totaled Rp 692.8 trillion in2017, crossing the government's target of Rp 678.8 trillion. Foreign direct investment alone grew 8.5 percent by receiving Rp 430.5 trillion ($32.34 billion) in 2017 as compared to the previous year [5] when Indonesia attracted $29 billion. In spite of this growth, the asset size of institutional investors in relation to GDP in Indonesia is only about 6% [6].

When the size of the institution is small, the supply chains fails to make any major impact. The small institutional investors suffer heavily because of their size chiefly on their working capital. For example, in small investment institutions, if the suppliers' cost of capital is higher than that

International Journal of Supply Chain Management
IJSCM, ISSN: 2050-7399 (Online), 2051-3771 (Print)

of the buyer's, it might result in the increase of the cost of the whole supply chain [7]. Such cost is difficult for both the seller and the buyer to pull out of the chain in all its stages. The impact of supply chain on banking institutions was also seen since it was applied only on their traditional financial products. Their client base was also very restricted. They could not apply the modern day SCM tools such as Reverse Factoring. This resulted in reduced liquidity. In Indonesia, the banking institutions suffered from this capital inadequacy ratio and thus strove for supply chain and process improvement practices like automation of transactions, elimination of paperwork and adoption of risk management practices. Similarly, the insurance investment institutions in Indonesia also found it challenging to relate their balance sheets with fixed incomes. The challenge of impact investment in insurance companies was also much larger than any other institutional investors.

Conventionally, in Indonesia, banks do not employ any integrated approach to manage their operations or provide end-product/service to a customer [3]. In other words, they do not have a predesigned, digitalized, fully integrated chain of supply of services involving a back office, risk management practices and a team of IT, business and financial experts though all these verticals are closely aligned in operations but without putting them into an integrated supply chain. This study has therefore attempted to examine the banking and insurance organizations of Indonesia in order to understand their supply chain practices and strategies. These two sectors were chosen primarily to focus only on supply chains rather than other multiple-tier practices such as outsourcing and offshoring adopted by other investment institutions to enhance their businesses. Unlike banks and insurance, those investment institutions have their supply chains external to their core operations with their supply chains exposed to such risks as corruption, environment degradation, depletion of natural resources and human rights issues [8]. The data was collected from assets managers and financial brokers associated with Indonesian banks and insurance companies.

The remainder of this study is outlined as follows. Section 2 presents the problem statement; section 3 examines the literature review of the subject under study. Section 4 contains methodology adopted for the study; section 5 presents the findings and results of the study. Finally, section 6 contains a summary and conclusion of this study.

1.1 Statement of the Problem

In the current investment scenario, institutional investment companies take the back seat for their inability to handle Big Data as mostly required by companies using supply chain practices. According to asset managers of these institutional investment companies, Big Data management requires automation and supply chains but the workflows of these companies is manual and based upon old styled spreadsheets, poorly organized data and irretrievable archives. These institutional investors have large volumes of raw, unfiltered data, without much variance, but requiring to be curated, aggregated and organized through supply chains ([9]. What these investment institutions need is a model to create risk management and performance metrics in order to analyze key portfolio holdings of these institutions. Currently, many institutional investors laboriously work on time consuming manually processed monthly or quarterly financial reports for the perusal of their top management or the board. Likewise, the data related to risk management and performance challenges are very limited and restricted with little scope for metrics or analysis to provide to their customers and other stakeholders. Even the strategic committee fails to take any decisions in the absence of such metrics. This study attempts to make an empirical investigation of the relationship between institutional aspect and supply chain strategy in relation with investment policy in Indonesia. The study has attempted to design a model that can act as a conceptual framework for designing supply chains for institutional investors in Indonesia.

2. Literature Review

The academic contribution and critical discourse on supply chain management in intuitional investors with relation to Indonesian investment policy has remained fragmented. There are scarce research efforts for making a systematic documentation of the core concepts of supply chains. Studies reveal that if institutions like banks and insurance companies lack the coordination and interconnectedness between suppliers and customers, it is difficult to build a supply chain [10, 11, 12] which results in huge disruptions in investment policies and patterns [13]. There are several studies that advocate the implementation of supply chains [14] [15] for both suppliers and customers as their relationship is significant to earnings. Another viewpoint forwarded in many studies is that institutional investors are informed market participants, which means they are quite familiar with institutional investment policies and patterns [16] [36] [37][38] [39]. A few studies even went to the extent of suggesting that institutional investors could own a supplier firm provided that they also own a stake in the firm's customer [17] [18] [40] [41] [42] [43] in the form of a joint ownership existing as a single institution. Such institutional investors having a joint ownership are less prone to negative information shocks if they have already adopted a supply chain for managing their operations.

A study was carried out on this kind of joint ownership of institutional investors [11] According to this study, customer-supplier relationships show less predictability in the case of market frictions leaving no scope for the investors to operationalize their supply chains for a sustainable period. This suggests that sustainable SCM would result in harmonious working relationships ([19]. A good example of sustainable SCM could be cited about a post Tsunami study about timber procurement in Banda Aceh, Indonesia [3] which was the worst hit areas during the 2004 Tsunami in which 130,000 lives were lost. This study reviewed construction supply chain management and procurement philosophies with a project management perspective to facilitate the logistics of post-disaster reconstruction. The extent to which the rescue and disaster management team worked in close coordination suggested a small supply chain with fewer supplier stocks in the form of humanitarian aid for tsunami victims and yet profiting in the form of providing the timely aid to the victims. In a similar study about coal production companies in Indonesia [20], a theoretical framework was attempted to understand sustainable supply chain management undertaking all the phases from adoption to implementation. These findings suggest that supply-chain linkages are important determinants of institutional investments, no matters the occasion or location, or whether that investment is for profits or humanitarian purposes.

After the Tsunami and the economic recessions, Indonesia revived itself as a strong middle-income (MIC) country. In the new era of economic revival, institutional investors in Indonesia emerged as stronger market informants helping their institutions to take wise trading decisions [16], [34], [35] In order to rehabilitate and revive socially and economically, institutional investors such as banks, insurance and pension funds companies encouraged people to invest in long-term instruments. Ostensibly, the Indonesian government also was determined to rebuild the financial sector and generously provided such instruments. Investment policy recommendations such as tax incentives and long-term saving and investment or social welfare schemes were among several investment plans. The Indonesian government linked all these financial services with supply chains and in order to coordinate domestic institutional investors with foreign direct investments (FDIs) which are yet another popular investment patterns in Indonesia.

The sustainable SCM gave a new dimension to institutional investment in Indonesia. There are several studies that have highlighted the critical success factors required for adoption and implementation of sustainable SCM practices in the Indonesian industry sectors [21 – 24]. These studies can be seen as initiatives to implement supply chains in the institutional investment environment by influencing the investment policy decision of the Indonesian government. For instance, a major breakthrough was suggested by experts [25], [26], [33] to introduce environmental friendly SCM practices by adopting green procurement practices particularly in hazardous industries such as coal, copper and other engineering enterprises. The evolution of green supply chains

would not only increase utilization of resources but also encourage eco-design and waste reduction practices.

3. Methodology

The data for this study was collected through interviews with portfolio managers, assets managers, brokers and commissioned agents in banks, insurance and stock institutions in Indonesia. The available secondary data from OECD and UNESCAP was also utilized for making an in-depth analysis of the issues raised in this study. The sample of this study comprised 30 respondents from more than ten institutions. The sample of this study was restricted to such investment institutions having investment portfolios like direct and indirect investments, mutual funds, stocks and taxation. After collecting the data, a theoretical framework (Figure 1) was designed for this study to graphically illustrate the significance and scope of institutional investments in different scenarios.

The model designed for this study (Figure 1) shows the scenario that investment companies can virtually aim for. What the investment companies need is the overhauling of the roles and responsibilities of property managers into portfolio of assets managers, which in turn should enhance into that of investment managers. The greater is the amount of data available in the institutions, the higher will be the demand for investment managers. On the revenue side, it is also estimated that there will be a fall in revenue generation of institutions depending on capital market and those which confine their activities to buildings, portfolios or enterprises (Figure 1).

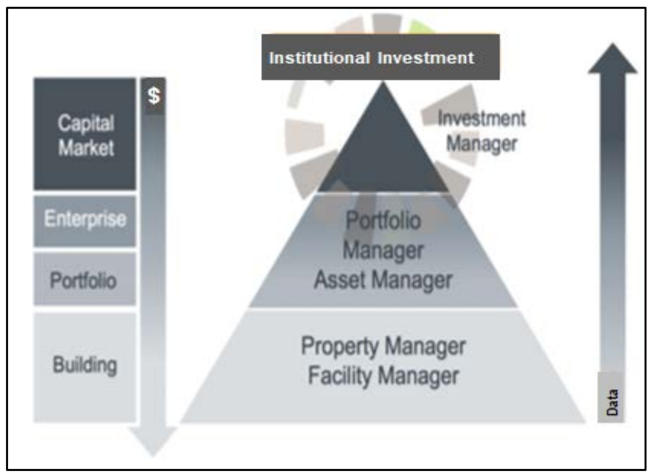

Figure 1 Theoretical Model of this study

4. Analysis and findings

The data collected from banks, insurance and stock institutions revealed the absence of supply chain strategies in these institutions. There were however evidences of collaboration with supply chain partners for petty activities

like the procurement of raw material and local operations; but for higher tasks such as monitoring the product life cycle, sales, operations, distribution, finance, and customer services, there were hardly any supply chains. For such a dire state of supply chain, institutional investments in Indonesia faced a crisis of financial SCM in banking and insurance sectors. According to the respondents, there was a need to improve the investment climate by taking a number of measures for all sections of the Indonesian society. A set of respondents recommended simplifying business procedures and harmonizing rules and less interference of the local authorities. Another group of respondents, expressing the difficulties faced in logistics, suggested strengthening the infrastructure, transportation and logistics. Among other suggestions included were the need of private sector participation, zone-based investment promotions; adaptable legal and institutional framework; simpler regulations in the labor market; and skills development of the workforce for the preparedness in the investment sector.

A common need felt by almost all respondents was to introduce supply chains in the governance of all types of investment projects. There was a consensus that such supply chain strategies should be designed that would be helpful in collating all data together. Additionally, for investment institutions, these supply chains will be helpful in several ways including the selection of location, enhancing the facility capacities, product decisions, choosing transportation and logistics resources.

At the macro level, the study examined the cross-border transactions in the form of Foreign Direct Investment (FDI) through investment institutions. The instruments examined were equity transactions, reinvestment of earnings, and inter-company debt transactions. The FDI flows were measured in USD and were compared with the OECD average for the years from 2005 to 2017 (Figure 2) The 36 member countries of Organization for Economic Co-operation and Development (OECD) which included every developed countries including Japan, Italy, France, Germany the US and the UK have endeavored to bring stability in FDI. Figure2 exhibits a relatively low FDI scenario in Indonesia but stable while the OECD average was fluctuating over the period under study. The reasons for such stability are explained further in terms of GDP growth as a result of investment policy adopted by the Indonesian government.

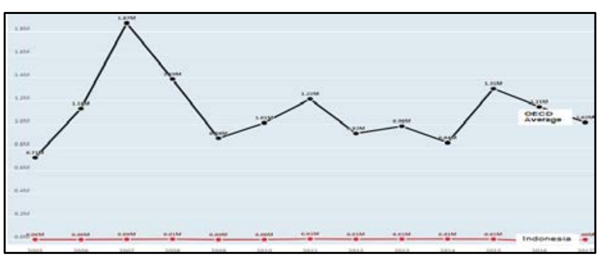

Figure 2 FDI (institutional investment) in Indonesia against OECD average. Source: OECD (2018) https://data.oecd.org/fdi/fdi-flows.htm#indicator-chart

Likewise, Figure 3 illustrates the Indonesian share of GDP as compared to OECD average. The reason for mentioning the GDP growth in this study was to draw attention to the increased spending of the Indonesian government in Infrastructure investment despite fiscal constraints such as Inflation and low exchange rate. The Indonesian investment policy is in the transition stage and aims at making fiscal reforms including stability in the exchange rate, reduction in interest rates during 2018 and 2019. Similarly, the Indonesian policy supported the exports of commodities such as coal, rubber and copper and opened opportunities of foreign trade and investment in these sectors. This enabled Indonesia to diversify its investment policies and participate in global value chains. This resulted in a greater employment and increase in technology transfer too. The tax reforms also resulted in social inclusiveness and public safety. Figure 3 exhibits a relatively low GDP scenario but stable when the OECD average was fluctuating over the period under study [4].

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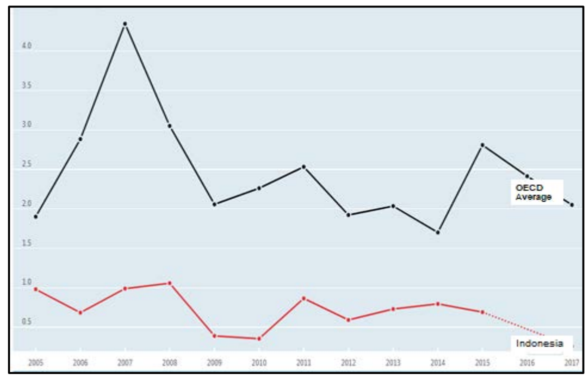

Figure 3 GDP (institutional investment) in Indonesia against OECD average
Source: OECD (2018)

The analysis at this stage now could move to understand the impact that the FDI scenario or GDP stability would make on supply chains of the institutional investors. It was realized through the study of documentation that these institutional investors capitalized on these reforms to develop a supply-chain network for the sustainability of their trade and businesses. The major impact was however seen in coal, rubber and copper industries however other institutional investors such as banking, insurance and stock exchanges were yet to take over supply chains in their operations and data management.

The information collected form their portfolio information available at stock exchanges are evidence of such a growth. These findings are consistent with prior studies that collected similar evidence of informed trade and marketing activities of institutional investors related to their growth in terms of FDI and GDP for a nation [18], [27]-[32]. These studies have also examined how investment institutions took the advantage of supply-chains.

5. Conclusion

This study explored the adoption and implementation of supply chain practices for the expansion of institutional investments firms in Indonesia. It discussed the domestic as well as foreign direct investment scenarios through a reflective approach. The issues addressed in this study included the relatively small data size of operations of institutional investors, slow flow of information and the absence of supply chain experts, the required infrastructure and other resources to implement supply chain and risk management practices. The study recommends a gradual but steady adoption of supply chain practices by assets managers and investment experts. The manual practices must also be replaced by automation and computerized applications and procedures. A need was also felt to increase the understanding of data analytics through exploring the Big Data applications. The implication of this study could be seen in all types of industries, besides banking, insurance and pension companies, which may adopt the supply chain practices as their routine standard operation procedures.

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